

Remarks

Dependent claims 35, 67, 82 & 95 have each been amended to more clearly define the subject matter of said claims and in a manner believed to address the Examiner's indefiniteness objection under 35 U.S.C. §112.

The applicant offers no other amendment of claims 12 to 99 as currently pending since it is the applicant's view that said claims clearly and patentably distinguish the present invention over the combination of prior art references Lyons et al (U6075798) and Nagami et al (US 5822319) for the following reasons.

The present invention is directed to a method and apparatus for transporting multi-protocol datagrams over a point to point protocol (PPP) link in an asynchronous transport network by encapsulating said datagrams into asynchronous transport network mini-cells. In the method of the invention, a channel identifier (CID) field in a header of a mini-cell is utilized to identify, through association with a respective PPP Identifier (PID), the multi-protocol datagram that is encapsulated in the mini-cell. Since this is a point to point link over an asynchronous transport network (such as ATM), no switching is required at the mini-cell layer (AAL2) (cf. page 6, lines 20 to 23) and thus having a PID field from PPP and a CID field from the mini-cell is in most cases unnecessary since the CID field can be made numerically equal to or apportioned by the same process that selects PIDs. As such, the present invention takes advantage of the redundancy between the PID field from PPP and the CID field in the ATM mini-cell header to utilize the CID field in a novel manner and contrary to its intended function of identifying a channel on which the mini-cell is to be transported (and switched as necessary) as it is transported through the asynchronous transport network. This provides a number of advantages over known uses of the point to point protocol as fully explained in the specification for the present application.

To establish a prima facie case of obviousness, the Examiner must firstly identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the (primary) reference or to combine the reference teachings. Secondly, there must be a reasonable expectation of success and finally, the prior art references must teach or suggest all of the claim limitations.

The Examiner has accepted that Lyons does not teach the system of the invention of encapsulating multi-protocol datagrams in mini-cells and associating point to point protocol identifiers (PIDs) of the datagrams within the CID fields of the mini-cells. In fact, although not expressly stated in Lyons, it is implicit therefrom that the CID field of the mini-cells' headers is used entirely for its properly defined function of identifying AAL channels for mini-cell transport in ATM packets across an ATM network. Consequently, there is no motivation for a skilled person to contemplate modifying the system taught by Lyons by using the CID field in the manner proposed by the present invention since to incorporate such a feature into the disclosure of Lyons would prevent switching at the AAL2 layer, contrary to the teaching of this reference. It should also be noted that Lyons does not teach the feature of the invention of transporting asynchronous transport packets into which the mini-cells encapsulating multi-protocol datagrams as aforesaid have been assembled over a point to point link through the asynchronous transport network. Lyons is entirely silent as to its use with the PPP.

Nagami also does not teach the feature of transporting asynchronous transport packets into which the mini-cells encapsulating multi-protocol datagrams in accordance with the invention have been assembled over a point to point link through the asynchronous transport network. Nor does Nagami teach the system of the invention of encapsulating multi-protocol datagrams within mini-cells and associating point to point protocol identifiers (PIDs) of the datagrams with the CID fields of the mini-cells. In fact, Nagami comprises a router cut-through technique

wherein, once datagram classification has been done once, the result can be stored against short-form information such as connection identifiers in routers without further recourse to examining the content of the datagrams. As such, the whole thrust of Nagami is to avoid referring to the content of a datagram including header information during datagram transport (cf column 1, lines 57 to 67 and column 2, lines 37 to 40)). Instead, Nagami proposes using a table stored in a router which registers a correspondence between a virtual connection identifier and protocol type information as a means of identifying a transfer target network interface for a datagram without needing to access the content of the datagram. Consequently, in Nagami, the virtual connection identifier and protocol type information stored in the router table comprises knowledge local to the router in contrast with the present invention in which the connections are established end to end *a priori* by a signalling protocol. Thus, Nagami makes no reference to associating a PPP identifier (PID) with the CID field of a mini-cell in an asynchronous transport network and is silent as to its use with the PPP.

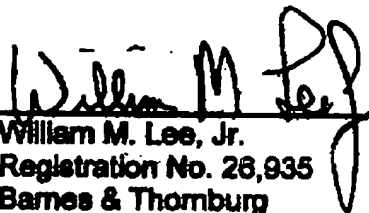
In view of the above, it is impossible to see how it can be concluded that the combined teachings of Lyons and Nagami teach or suggest all of the claim limitations of the independent claims currently pending in the present application notwithstanding the lack of motivation to do so nor the fact that to use the CID field in Lyons in the manner proposed by the present invention cannot possibly succeed and so offers no reasonable expectation of success. The motivation suggested at the bottom of page 3 of the office action is so broad as to be meaningless in the context of a rejection under 35 U.S.C. §103(a). It is always desirable to improve technology for economic reasons but that is not sufficiently succinct as to motivate one skilled in that art to consider modifying Lyons or combining the teachings of Lyons and Nagami. In any event, as already discussed, such a combination still fails to teach all of the claim limitations.

The Examiner's various rejections raised against independent claims are believed moot in view of the above.

Favorable reconsideration of the application is therefore requested.

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Respectfully submitted,


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